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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,839	09/24/1999	GUNTER DOEMENS	P99.1690	4490

30596 7590 02/25/2003

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EXAMINER

LAROSE, COLIN M

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/381,839

**Applicant(s)**

DOEMENS ET AL.

**Examiner**

Colin M. LaRose

**Art Unit**

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 September 1999 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Arguments and Amendments*

1. Applicants' arguments and/or amendments filed 3 January 2003, have been entered and made of record.

2. Applicant's arguments with respect to amended claim 1 have been fully considered, but they are not persuasive.

Applicant asserts that Di Matteo does not teach identifying at least three depth planes of the object. As best understood from the Specification, Examiner interprets "three depth planes" to denote the XYZ dimensions, or depth planes, of an object. Di Matteo discloses determining the 3-D coordinates of the surface of an object, wherein the coordinates correspond to the X, Y, and Z dimensions of the object. Column 11, lines 56-68: Z coordinate is determined by the color bands, and the X and Y coordinates are determined with a color grid. Therefore, Di Matteo does disclose identifying three depth planes of an object.

Applicant asserts that Poradish makes no reference or suggestion that the full-color projection display system is capable of object identification in an image. While this may be true, Poradish is only relied upon for the teaching and motivation to replace the standard 3-color projection system with a digital micromirror device.

The claims as amended are still believed to be an obvious combination of the cited prior art as set forth below.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Di Matteo and disclosed prior art of Poradish.

Regarding claim 1, Di Matteo discloses a method for three-dimensional identification (i.e. identification of three depth planes; column 11, lines 56-58) of an object having an object surface, said method comprising the steps of:

successively projecting a number of encoded illumination patterns (column 1, lines 61-66, and figure 5) to sequentially illuminate said object surface with at least three colors (figure 5) in a beam path through a variable filter (column 5, lines 28-31) onto said object surface for identification of at least three depth planes of said object in a single image;

registering said image of said object with a color camera from a direction different from said beam path (figure 1a); and

calculating a high precision topography of said object surface from said registration in a control and evaluation unit (column 1, lines 28-32, and computer 48, figure 4 that reconstructs the object's surface [column 6, lines 23-28]).

Di Matteo utilizes a standard projection system and thus is silent to sequentially illuminating a digital micro mirror arrangement via a light source of at least three colors and driving the digital micro mirror arrangement to sequentially illuminate the object.

Poradish discloses the operation of a digital micromirror device (DMD) in a projection system (figure 1). The color wheel 20a ("variable color filter") sequentially transmits red, green,

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and blue light to the light modulator 30a, which comprises a DMD. Then the light is projected through a lens 32a onto the screen. Column 3, lines 26-53.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Di Matteo by Poradish to illuminate a digital micro mirror arrangement via a light source and drive the digital micro mirror arrangement to sequentially illuminate an object, since Poradish discloses that replacing a full-color projection display with a digital micro mirror arrangement that sequentially displays red, green, and blue light is preferred because the DMD reduces the amount of system hardware (column 1, lines 63-66).

Regarding claim 2, Di Matteo discloses the encoded illumination patterns comprising a stripe pattern having successively varied periodicity (figure 5).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Di Matteo and Poradish, as applied to claim 1, and further in view of disclosed prior art of Pipitone.

Regarding claim 3, it is unclear whether Di Matteo discloses that the method is used for facial identification.

Pipitone discloses that three-dimensional imaging of faces is a conventional practice (column 1, line 19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Di Matteo and Poradish by Pipitone to use the three-dimensional imaging method for the identification of faces since Pipitone discloses determining the three-dimensional shape of a human face is used e.g. for security purposes (column 1, line 19).

*Conclusion*

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. The examiner can normally be reached Monday through Thursday from 8:00 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

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CML

Group Art Unit 2623

3 February 2003

  
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